ERRATA for VARIANCE COMPONENTS (1st Printing)

by

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ABSTRACT

Corrections to a book.

Page/Line

vii/16: After restricted add (or residual) [There is room on the line.]

7/2: Penultimate word: fitted should be filled [ll not tt] .

17/Table 1.6, line 7 of body of table: delete space in α_i $E(e_{ij})$ so as to have

$$E(e_{ij}\alpha_i) = \alpha_i E(e_{ij}) = 0$$

45/5: refered should be referred .

64/6, equation (68), before the equal sign: $\text{var}(\hat{\sigma}^2_e)$ should be $\text{var}(\hat{\sigma}^2_\alpha)$ [subscript α not e] .

64/7, equation(69), the last symbol: σ^2_e should be σ^4_e [superscript 4 not 2] .

64/11, equation (71), the last symbol: σ^2_e should be σ^4_e [superscript 4 not 2] .

64/13, equation (72), the last symbol: $-2\hat{\sigma}^2_e$ should be $-2\hat{\sigma}^4_e$ [superscript 4 not 2] .

65/4 up, the right-most expression: $\frac{F}{F_U} - 1$ should be $\frac{F}{F_L} - 1$ [on denominator F subscript L not U] .

74/15, equation (96), numerator: $-2\sigma^2_e$ should be $-2\sigma^4_e$ [superscript 4 not 2] .

75/3, equation (101), middle term: σ^2_e should be σ^4_e [superscript 4 not 2] .

75/8, equation (102), right-most terms: $]\sigma^4_\alpha$ should be $\sigma^4_\alpha]$.

86/9 up: $-[E(\hat{\sigma}^2_e)]^2$ should be $-[E(\tilde{\sigma}^2_e)]^2$ [tilde not hat, i.e., ˜ not ˆ] .

87/12 up, equation (132c): $\sum$ should be $\sum_i$ [subscript i] — TWICE.

in second term, denominator λ^2_i should be $2\lambda^2_i$ [add 2] .

89/Table 3.10:

3rd line, 1st term: $l_{\mu,\,\sigma_e^2}$ should be $l_{\mu,\,\sigma_\alpha^2}$ [on the subscript σ^2, subscript α not e] .

4th line, 3rd term after = sign: $\bar{y}_{\cdot}$. should be $\bar{y}_{i\cdot}$. [on $\bar{y}$ superscript i · not ·] .

5th line, 2nd term after = sign: $n_i(\bar{y}_{i\cdot} - \mu)^2$ should be $n_i^2(\bar{y}_{i\cdot} - \mu)^2$ [n_i^2 not n_i] .

92/15: Move the (146) up to be level with the line of space that is between the two "displayed" lines.

In the first of those "displayed" lines the $>$ should be $\geq$.

In the second of those "displayed" lines the $\leq$ should be $<$.

94/12 up, the equation which follows the partial line of text that comes after equation (150):

underneath (150): add (151) so as to have

$$\tilde{\sigma} = (1 - 1/n)s^2 \tag{151}$$

110/1: Derive $L(\mu, \sigma^2|s^2)$ should be Derive $L(\sigma^2|s^2)$ [delete μ] .

110/18, 2nd line of (a) of E3.24: estimators should be estimates .

110/E3.25, line 2, last symbol: 0 should be bold [bold zero] .

line 3, after a,: add: and with every $\mathbf{e}_i$ and $\mathbf{e}_{i'}$ having zero covariance,

lines 4, 5, and 6: align (i), (ii) and (iii) to the right

align the corresponding $\text{var}(\mathbf{e}_i)$ to the left so as to have

(i) $\text{var}(\mathbf{e}_i) =$

(ii) $\text{var}(\mathbf{e}_i) =$

(iii) $\text{var}(\mathbf{e}_i) =$

115/last, last expression: *wabc* (Rule 8) should be *wabc* (Rule 8) $- 1$ [add -1] .

117/4 up: MS(*A:B*) should be MS(*AB*) [delete :] .

154/7, after the first = sign: $\mathbf{1}_s'$ should be $\mathbf{1}_s$ [delete prime] .

163/19, equation (107): $\mathbf{X}(\mathbf{X}'\mathbf{X}) - \mathbf{X}'\mathbf{y}$ should be $\mathbf{X}(\mathbf{X}'\mathbf{X})^-\mathbf{X}'\mathbf{y}$

[Must be identical to (107) on page 159.]

163/20, equation (110): $\mathbf{X}(\mathbf{X}'\mathbf{V} - \mathbf{X})^-\mathbf{X}'\mathbf{V}^-\mathbf{y}$ should be $\mathbf{X}(\mathbf{X}'\mathbf{V}^{-1}\mathbf{X})^-\mathbf{X}'\mathbf{V}^{-1}\mathbf{y}$

[Must be identical to (110) on page 160.]

164/9, part (c) of E4.4: β'^2_j should be $\dot{\beta}^2_j$ [dot above β, not superscript prime] .

166/exercise E4.18:

Delete all 3 lines of part (c).

Relabel part (d) as part (c).

After item (ii) of part (d) [which is now (c)] add:

(iii) Write down the terms of $\mathbf{V} = \text{var}(\mathbf{y})$ that involve the variance components $\sigma^2_{\text{M:CB}}$, $\sigma^2_{\text{F:C}}$ and $\sigma^2_{\text{FM:CB}}$. Use Kronecker products of **I**–matrices and **J**–matrices.

171/equation (4): Delete the penultimate + sign and close up so as to have $\Big\}_{j=1}^{b} \Big\}_{i=1}^{a} \boldsymbol{\gamma} + \mathbf{e}$.

178/equation (23), after the = sign, first row, second term:

$-2\sigma^2_e$ should be $-2\sigma^4_e$ [superscript 4 not 2] .

219/equation (144), the 1st denominator: a should be b .

the 2nd denominator: b should be a .

251/last, just prior to the 3rd = sign: $\mathbf{Z}_j \mathbf{Z}_j \sigma^2_j$ should be $\mathbf{Z}_j \mathbf{Z}'_j \sigma^2_j$ [add a prime] .

259/8, 3rd word: normally should be normal [delete ly] .

261/4, last term: $\mathbf{DZ}'$ should be $\mathbf{ZD}$.

262/10: Change this line to be: $= E_y\{(\tilde{\mathbf{u}} - \mathbf{u}_0)' \mathbf{A}(\mathbf{u}_0 - \mathbf{u}_0)\} = \mathbf{0}$ [Delete E_u, delete square brackets, use round parentheses, add a prime, zero is to be bold.]

262/11: Change this line to be: since, given $\mathbf{y}$, only $\mathbf{u}|\mathbf{y}$ is not fixed with $E_u(\mathbf{u}|\mathbf{y}) = \mathbf{u}_0$. Therefore

Note to editor: If this is too much for the one available line then cut the "with $E_u(\mathbf{u}|\mathbf{y}) = \mathbf{u}_0$".

290/6 of Section 8.1: (28) should be (27a) .

(103) should be (89) .

(104) should be (90) .

303/7 up: $\mathbf{B}^{-1} \to 0$ should be $\mathbf{B}^{-1} \to \mathbf{0}$ [bold zero] .

308/7, equation (42), 1st term: $\mathbf{u}'_1 \mathbf{u}_1$ should be $\mathbf{u}'_i \mathbf{u}_i$ [subscript i not 1] .

314/exercise E8.7, second line: $\text{tr}(\mathbf{Z}_i \mathbf{P} \mathbf{Z}'_i \leq \text{tr}(\mathbf{Z}_i \mathbf{V} \mathbf{Z}'_i)$ should be $\text{tr}(\mathbf{Z}'_i \mathbf{P} \mathbf{Z}_i) \leq \text{tr}(\mathbf{Z}'_i \mathbf{V}^{-1} \mathbf{Z}_i)$

[On each side of the $\leq$ sign, prime should be on 1st $\mathbf{Z}_i$ not the last.]

367/9 of 2nd paragraph: P_i should be p_i [lower case, italic] .

372/equation under (10): subscript to f should be $\mathbf{y}|\mathbf{p}$ not $\mathbf{p}|\mathbf{y}$.

378/3 up, after the 1st = sign: $\sigma^2_\alpha \mathbf{I}_a$ should be $\sigma^2_{\alpha_1} \mathbf{I}_a$

[On σ^2, the subscript α needs a subscript 1 (one), akin to the subscript 2 in the last line.]

384/2, first term: $2\mathbf{l}_\beta$ should be $2l_\beta$ [el should not be bold – see (24)] .

390/Table 11.1, footnote: Hooking should be Hocking [oc not oo] .

395/4 up, equation (52): $\{_d$ should be $\{_r$ [r not d] .

397/equation (59), immediately after = sign: $\{_d$ should be $\{_c$ [c not d] .

398/equation (60), immediately after = sign: $\{_d$ should be $\{_c$ [c not d] .

407/equation (8): σ^2 should not be bold .

407/two lines above equation (10): the middle E should be feint italic not bold Roman.

410/4 up, equation (22): $\mathbf{T}_A$ should be $\mathbf{T}_4$ [4 not A]

421/5 up: In Brown (1976), 1978) should be Brown (1976, 1978) [No parens before the comma.]

445/8 up: Move the a_k to the right to be under the zeros.

448/4 below equation (6): (ii) should be (iii) .

449/2 below equation (17): threom should be theorem .

453/Equation (29), right-hand side of the = sign: the + should be −
the − should be +

Thus the equation will be

$$(\mathbf{D} + \lambda \mathbf{t}\mathbf{t}')^{-1} = \mathbf{D}^{-1} - \frac{\mathbf{D}^{-1}\mathbf{t}\mathbf{t}'\mathbf{D}^{-1}}{1/\lambda + \mathbf{t}'\mathbf{D}^{-1}\mathbf{t}}$$

453/3, equation (27), immediately after + sign:

$$\begin{bmatrix} -\mathbf{A}^{-1} \\ \mathbf{0} \end{bmatrix} \text{ should be } \begin{bmatrix} -\mathbf{A}^{-1}\mathbf{B} \\ \mathbf{I} \end{bmatrix} \quad \begin{matrix} \text{[add } \mathbf{B}\text{]} \\ \text{[}\mathbf{I} \text{ not } \mathbf{0}\text{]} \end{matrix} .$$

480/6 up, last name VonKrosig should be von Krosigk [lower case v, space after von, add final k] .